FD-1539

USSR/Medicine - Medical Statistics

Card 1/1 : Pub 102-10/14

Author : Sifman, R. I. (Moscow)

Title : On the question of methods of investigating the morbidity rate among infants

Periodical : Sov. zdrav., 6, 43-47, Nov-Dec 1954

Abstract : Although the medical statistical method as an organized and formulated scientific technique can stand some improvements in the USSR, it is superior to the system practiced in the capitalist countries. Since infants are treated primarily in outpatient clinics, where registration of patients is conducted in a systematic manner, determination of sickness rates among that population group can be confined almost entirely to returns from those sources.

Institution :

Submitted :

SIFMAN, B. I.

Calculation method of the indicators of infant mortality.
Zdrowie pub., Warsz. No.3:188-190 May-June '55.
(VITAL STATISTICS
inf.mortal., indicator calculation method)

SIFMAN, Roza Iosifovna; MAZUR, M.M., red.; BEL'CHIKOVA, Yu.S., tekhn.red.

[Statistics on the health and medical care of children] Statistika zdorov'ia i meditsinskogo obsluzhivaniia detei. Moskva, Gos. izd-vo med.lit-ry Medgiz, 1960. 110 p.

(MIRA 14:1)

(PEDIATRICS--STATISTICS)

SIFMAN, Raisa Iosifovna; BIKYUKOVA, R.I., red.; MATVEYEVA, M.M., tekhn. red.

[Statistics on health protection for the mother and the newborn infant] Statistika okhrany zdorov'ia materi i novorozhdennogo. Moskva, Medgiz, 1963. 130 p. (MIRA 17:1)

S/058/62/000/008/068/134
A061/A101

AUTHORS: Jůza, Jan, Kmoníček, Vladimír, Šifner, Oldřich

TITLE: Specific volume and equation of state of water in the range of 500 - 3,500 bars and 80 - 350°C

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 7, abstract 8D52 ("Acta techn." (CSSR), 1961, v. 6, no. 6, 553 - 572, English; summary in Russian)

TEXT: An experimental device for determining the specific volumes of liquids and gases in the range of 80 - 350°C and 500 - 3,500 bars is described. A preliminary testing has shown this device to permit measurements with the following limit errors: specific volume, 0.001 cm^3/g, temperature, 0.2°C, and pressure 10 bars. Results of a specific water volume determination are presented. The experimental data obtained are compared with those of other authors. Divergences do not exceed the error limits mentioned above. An equation of state for water and steam is suggested in conclusion, and is confronted with experimental data of a number of authors. In the range investigated by the authors

Card 1/2

SIFNER, Oldrich, inz. CSc.

Some noncontact methods of high temperature measurement. Stroj cas 16 no.2:247-252 '65.

1. Institute of Thermomechanics of the Czechoslovak Academy of Sciences, Prague. Submitted October 5, 1964.

L 00152-66 EWT(l)/EWP(m)/EWT(m)/EWA(d)/EWP(t)/EWP(z)/FCS(k)/EWP(b)/EWA(h)/EWA(c)
ACCESSION NR: AP5013193 JD/WW CZ/0041/65/000/002/0247/0252

AUTHOR: Sifner, Oldrich (Shifner, O.) (Engineer, Candidate of sciences)

TITLE: Some optical methods of measuring high temperatures

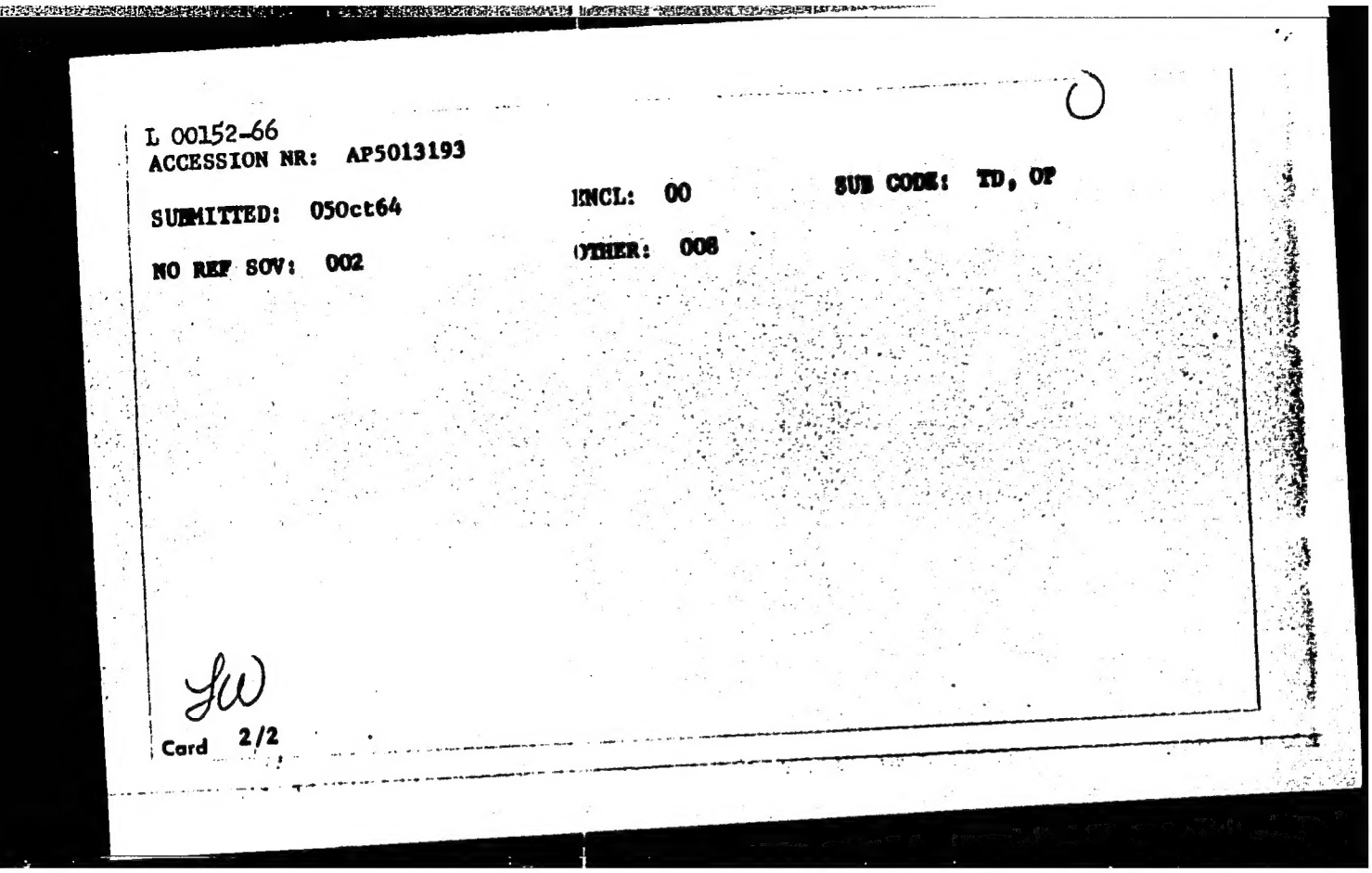
SOURCE: Strojnicky casopis, no. 2, 1965, 247-252

TOPIC TAGS: shock tube, temperature measurement, gas spectroscopy, high temperature research

ABSTRACT: The article discusses the spectroscopic measurement of gas temperatures in shock tubes at 2000-5000K. The widely employed and reliable spectral line reversal technique has been adapted to the measurement of fast transients; it is a double-beam method using two parallel beams whose intensity is adjusted so that one is higher and the other lower than the intensity corresponding to the presumed gas temperature. The resultant electron excitation temperature is then obtained by interpolation. Experimental results reported by various authors are in good agreement with the temperatures calculated from shock speed measurements. Orig. art. has: 5 figures and 7 formulas.

ASSOCIATION: Ustav termomechaniky CSAV, Prague (Institute of Thermomechanics, CSAV)

Card 1/2



L 00152-66
ACCESSION NR: AP5013193

SUBMITTED: 05Oct64 ENCL: 00 SUB CODE: TD, OP

NO REF SOV: 002 OTHER: 008

Card 2/2

GOTS, D.I., inzh.; KICHAYEV, V.A., inzh.; SIFORENKO, N.I., inzh.

Punch-type stull rod bolting. Shakht. stroi. 7 no.8:30-31 Ag '63. (MIRA 16:11)

1. Pechorskiy nauchno-issledovatel'skiy ugol'nyy institut.

SIFOROV, I.K.

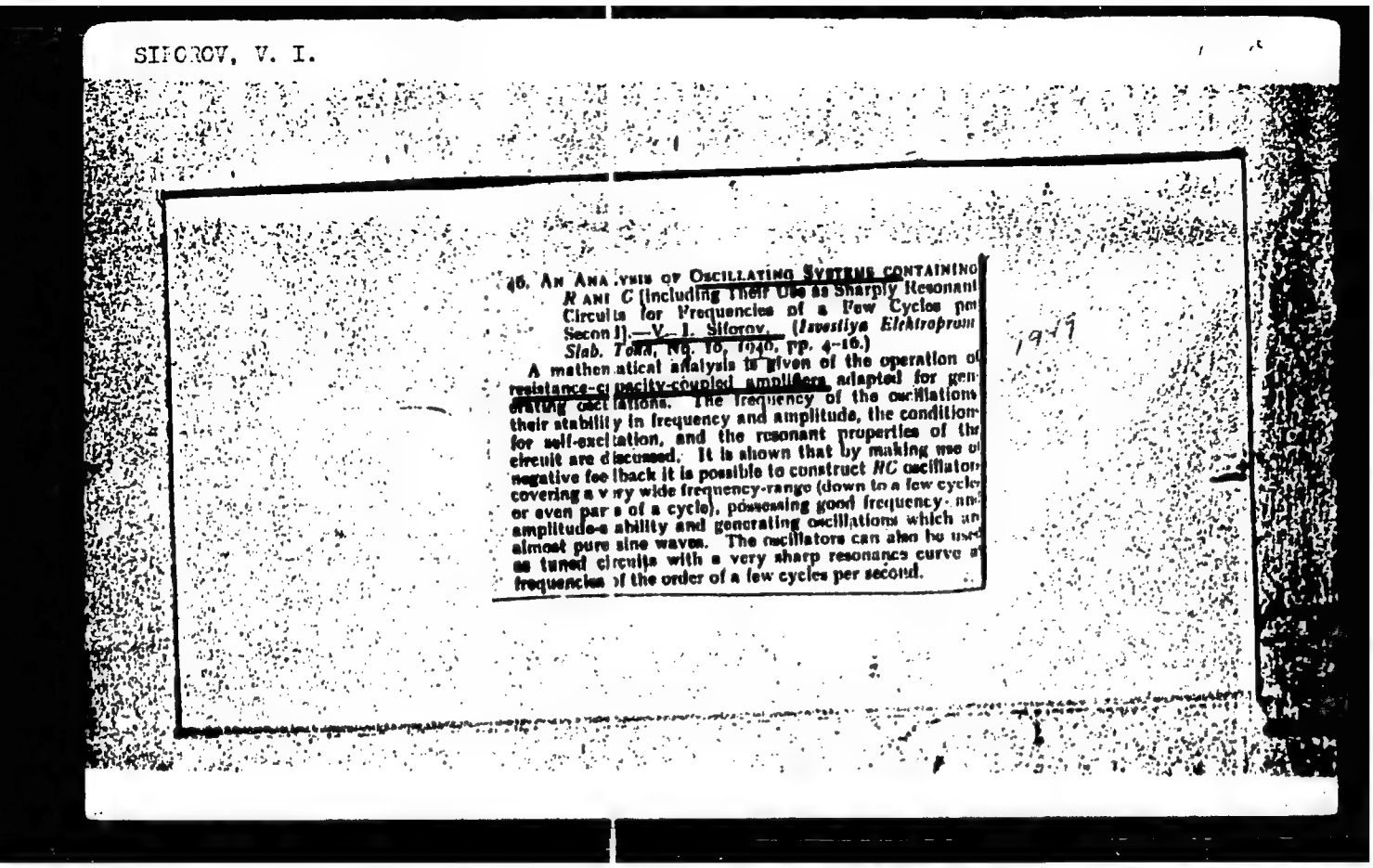
Drugstores in the Khmelnik District of Vinnitsa. Farmatsev. zhur. 15 no.1:65-67 '60. (MIRA 14:5)

1. Zaveduyushchiy aptekoy No.97, g.Khmel'nik, Vinnitskoy obl.
(VINNITSA--DRUGSTORES)

SIFOROV, I.K.

Work of a local pharmacy at a polyclinic. Farmatsev. zhur. 17 no.3: 78-80 '62. (MIRA 17:10)

1. Upravlyayushchiy aptekoy No.97 g. Khmel'nik, Vinnitskoy oblasti.



SIFOROV, V. I.

46. An Analysis of Oscillating Systems containing *R* and *C* (including Their Use as Sharply Resonant Circuits for Frequencies of a Few Cycles per Second).—V. I. Siforov. (*Izvestiya Elektroprom Slab. Toka*, No. 10, 1940, pp. 4–16.)

A mathematical analysis is given of the operation of resistance-capacity-coupled amplifiers adapted for generating oscillations. The frequency of the oscillations, their stability in frequency and amplitude, the conditions for self-excitation, and the resonant properties of the circuit are discussed. It is shown that by making use of negative feedback it is possible to construct *RC* oscillators covering a very wide frequency-range (down to a few cycles or even parts of a cycle), possessing good frequency- and amplitude-stability and generating oscillations which are almost pure sine waves. The oscillators can also be used as tuned circuits with a very sharp resonance curve at frequencies of the order of a few cycles per second.

1941

SIFOROV, V. I.

"Valve amplifier for a Spectrophone," Dok An 46, No 5, 1945; State Optical Inst.

SIFOROV, V. I. PA 19T1

USSR/Radio Interference Apr 1946
Radio reception, UHF

"Effect of Interference on Radio Reception of Pulse Signals," Prof V. I. Siforov, Dr of Mech Sci, 15 pp

"Radiotekhnika" Vol I, No 1

Analysis of specific conditions for obtaining maximum effective sensitivity in the reception of pulse signals on UHF. Experimental data given to confirm the basic theoretical calculations.

19T1

SIFOROV, V. I. PA 19T20

USSR/Oscillators, Electron Tube Aug 1946
Oscillators, High frequency

"Synchronization of Tube Oscillators With Simple-Fractional Ratios Between the Frequencies," Prof V. I. Siforov, Dr of Mech Sci, 7 pp

"Radiotekhnika" Vol I, No 5

The investigation employs special parameters to characterize vacuum tubes, making it possible to determine the frequency band width within which synchronization is possible, and to estimate the influence of various factors on these parameters and the phase angles between the synchronized and synchronizing signals.

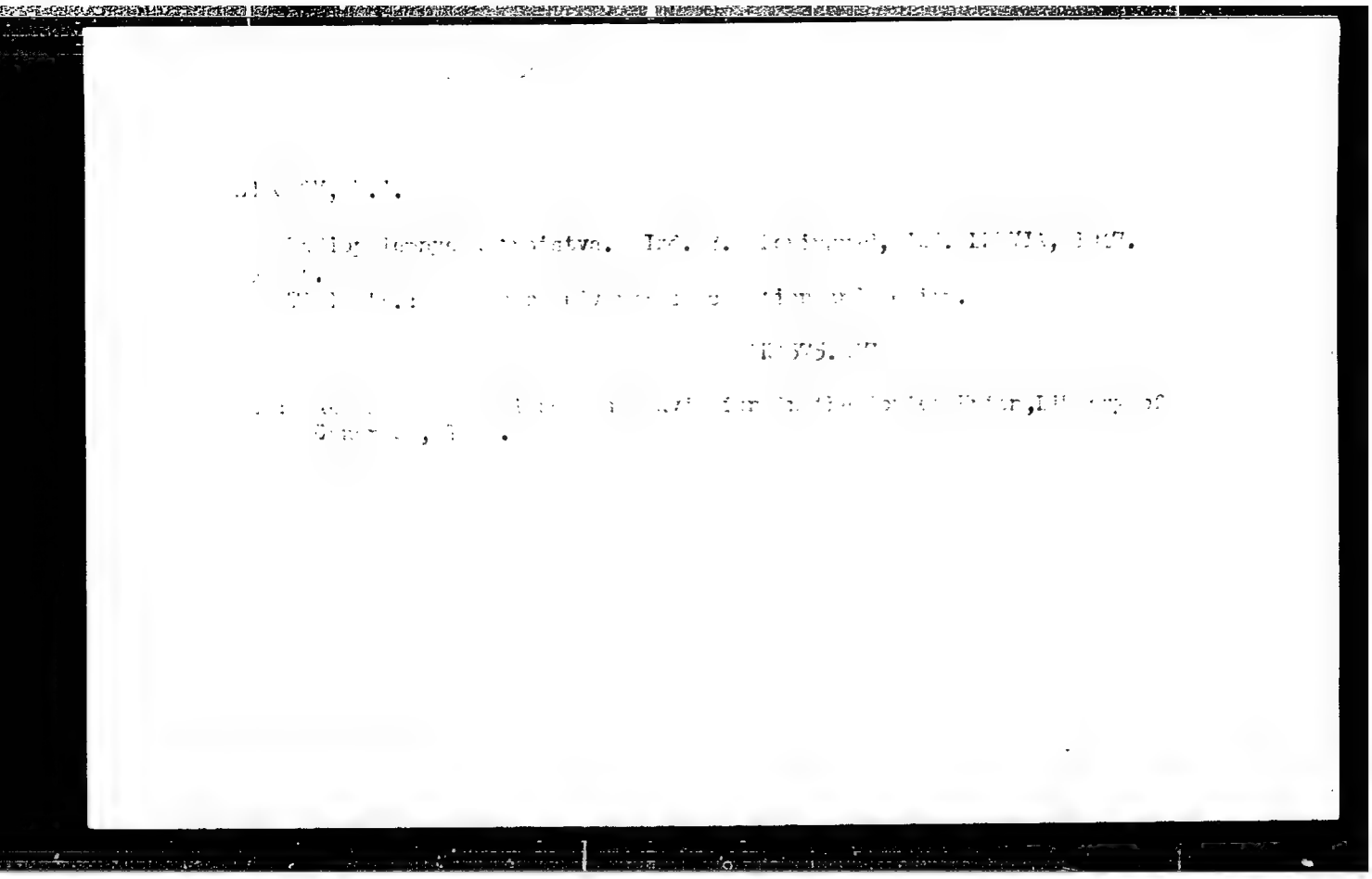
19T20

[illegible], V. [illegible].

K teorii usilitelei ul'travysokoi chastoty. (Radiotekhnika, 1947, v. 2, no. [illegible], p. 3-21, diagrs., bibliography)
Title tr.: Theory of UHF amplifiers.

[illegible] 1947

SO: Aeronautical sciences and aviation in the Soviet Union, Library of Congress, 1955.



SIFOROV, V. I.

"Analysis of the Passage of Signal Impulses and Noise Through the Receiver of a Pulse-Radio-Navigation Device,"

Trudy Leningradskoy Krasnoznamennoy Voenno-Vozdushnoy Inzhenernoy Akademii, no 13, 1957.

SIFOROV, V. I.

FA 7/49T94

USSR/Radio May/Jun 48
Vacuum Tubes - Noises
Amplifiers, Ultrahigh Frequency

"Study of the Noise Characteristics of Amplifier Tubes When Operating in the Ultrahigh-Frequency Bands," V. I. Siforov, Dr Tech Sci, 20 pp

"Radiotekh" Vol III, No 3

Gives theory of ultrahigh-frequency amplifiers based on a tube representation in the form of active noisy quadrapoles. Describes general conditions for obtaining maximum signal to noise ratio in an amplifier circuit. Discusses the possibility of

7/49T94

USSR/Radio (Contd) May/Jun 48

neutralization of tube noise and conditions necessary for this. Determines basic noise relationship of multistage circuit which allows the determination of their noise characteristics for known characteristics of individual elements.

7/49T94

SIFOROV, V.I.; GEYMAN, A.Ya., inzh.-mayor, red.; KUZ'MIN, I.F., tekhn. red.

[Radio receiving devices] Radiopriemnye ustroistva. Izd.4., perer. Moskva, Voen.izd-vo voen. M-va SSSR, 1951. 647 p. (MIRA 16:8)

(Radio--Receivers and reception)

SIFOROV, V. I.

USSR/Electricity - Personalities HF Techniques

Jul 53

"V. P. Vologdin (Deceased)," P. I. Skutnikov, S. A. Rinkevich, N. P. Bogoroditskiy, V. I. Siforov, V. V. Vologdin, and others

Elektrichestvo, No 7, p 94

Obituary of Prof Valentin Petrovich Vologdin (22 Mar 1881-23 Apr 1953), covering principal activities and achievements of his professional life. An eminent specialist in hf techniques (heating, surface hardening, etc), he was an active educator (esp at LETI), author (more than 100 published works), inventor (more than 120 inventions), and won Stalin Prize in 1943 and 1952.

271T60

SIFOROV, V., chlen-korrespondent.

Statistical regularities in radio engineering. Radio no.11:6-8 N '53. (MLRA 6:11)

1. Akademiya nauk SSSR. (Radio research)

SIFOROV, V.I.; KOLOMIYTSEVA, O.I., redaktor

[Radio and its use] Radio i ego primenenie. Moskva, Gos. izd-vo kul'turno-prosvetitel'noi lit-ry, 1954. 77 p. [Microfilm] (MLRA 8:2)

1. Chlen-korrespondent Akademii nauk SSSR (for Siforov)
(Radio)

SIFOROV, V.I., redaktor; BASKAKOVA, L.B., redaktor; YAKIMENKO, L.P., redaktor; GERASIMOVA, Ye.S., tekhnicheskiy redaktor.

[Small radio apparatus; problems of construction, production and use. Collection of articles translated from foreign periodical literature] Malogabaritnaia radioapparatura; voprosy konstruirovaniia, proizvodstva i ekspluatatsii. Sbornik perevodov statei iz inostrannoi periodicheskoi literatury. Moskva, Izd-vo inostrannoi lit-ry, 1954. 372 p. (MLRA 8:5)

1. Chlen-korrespondent AN SSSR (for Siforov).
(Radio--Apparatus and supplies)

SIFOROV, V.I.

[Radio receivers] Radiopriemnye ustroistva. Izd. 5-e. Moskva, Voenizdat, 1954. 804 p. (MLRA 8:1D)

SIFOROV, V.
USSR/Electronics - Radio

Card 1/1

Author : Siforov, V., Correspondent-Member of the Academy of Sciences of USSR.

Title : The Development of Radio Engineering in USSR

Periodical : Radio. 5, 7 - 9, May 1954

Abstract : General survey of the progress of Soviet Russia in the field of radio engineering. The survey covers the period from 1895 (when according to the Soviet-Russian claims, the Russian scientist A. S. Popov constructed the first radio-receiver in the world), up to the present time. The article lists the number of radio receivers and television sets planned for 1954 and 1955. Data on the volume of certain auxiliary radio components and parts, planned to be put on the market in 1955, are also given in this article.

Institution : ....

Submitted : ....

FD-1120

USSR / Engineering

Card 1/1 Pub. 41-1/17

Author : Siforov, V. I., Moscow

Title : Methods of calculating reliability of performance of systems containing a large number of elements

Periodical : Izv. AN SSSR. Otd. tekh. nauk, 6, 3-12, Jun 1954

Abstract : Gives methods for calculating reliability of performance of systems containing a large number of elements. Methods based on quantitative relationships linking the probabilities of breakdown of the entire system with the probabilities of breakdown of its elements. An example of such a system is a radio relay trunk line. Graphs.

Institution :

Submitted : May 17, 1954

Translation M-722, 24 Aug 55

USSR/ Miscellaneous - Radio amateurs

Card 1/1 Pub. 89 - 6/31

Authors : Siforov, V., Correspondent-Member of the Academy of Sciences of the USSR; Prof. Goron, I., Dr. of Engineering Scs; and Kontorin, N., Radio-center opr.

Title : They started their work as radio amateurs

Periodical : Radio 11, 11-12, Nov 1954

Abstract : The following three articles are given under this title: 1. "Search for New Trends in Science and Practice", by V. Siforov; 2. "My First Receiving Set", by I. Goron, and 3. "A Favorite Occupation," by N. Kontorin. The personal experiences of the authors during the early days of radio are recounted.

Institution : ...

Submitted : ...

SIFOROV, Vladimir Ivanovich; VRUBLEVSKIY, A.V., inzhener-mayor, redaktor; KUZ'MIN, I.F., tekhnicheskiy redaktor

[High-frequency radio receivers.] Radiopriemniki sverkhvysokikh chastot. Moskva, Voen.izd-vo Ministerstva obor. SSSR, 1955. 595 p. (Radio--Receivers and reception) (MLRA 9:3)

SIFOROV, V.

Look bravely to the future. Radio no.5:19 My '55. (MLRA 8:6)

1. Chlen-korrespondent Akademii nauk SSSR.
(Radio)

SIVOROV,V. (Rim-Moskva)

The Rome radio exhibition. Radio no.11:59-60 N'55. (MLRA 9:1)

1. Chlen-korrespondent Akademii nauk SSSR.
(Rome--Radio--Exhibitions)

SIFOROV, V.

Struggle for technical progress. Radio no.12:4-6 D '55. (MLRA 9:4)

1.Chlen-korrespondent Akademii nauk SSSR.
(Radio) (Electronics)

SIFOROV, Vladimir Prof. Cor. Mbr., AS USSR

"Codificazione binaria,"

"Accumulazione di rumori ed evanescenza nei ponti radio a microonde,"

papers presented at the 3rd International Exhibition for Electronics and Nuclear Energy, Rome, 29 Jun - 14 Jul 1956

SO: 552483

Siforov, V.I.

Category : USSR/Radiophysics - Application of Radiophysical Methods I-12

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4691

Author : Siforov, V.I.
Title : Superposition of Noise and Fading in Intertoll Radio Relay Lines

Orig Pub : Elektrosvyaz', 1956, No 5, 6-17

Abstract : The law of distribution of probability of the signal to noise ratio at the output of a radio relay line consisting of n intermediate stations is calculated, with allowances for the fluctuations in the field intensity in each section. From the consideration of the vector geometrical relationships between the unmodulated carrier and the noise, it follows that the ratio of the noise to signal power at the output of the radio relay line is proportional to $\sum_k 1/P_{sk}$ (P_{sk} is the signal power at the output of the k'th station of the radio relay lines (a random quantity)). The distribution law for the noise to signal ratio at the output of the radio relay line, $\Sigma(x)$, is obtained by the method of characteristic functions under the assumption that the distribution of the field intensity at the input of each individual station obeys the Rayleigh law.

Card : 1/2

SIFOROV, V.I.

Category : USSR/Radiophysics - Statistical Phenomena in Radiophysics I-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4441

Author : Siforov, V.I.
Title : Noise Rejection of a System with Correcting Codes

Orig Pub : Radiotekhn. i elektronika, 1956, 1, No 2, 131-142

Abstract : A method is proposed for determining the number of code combinations, formed from n binary units and differing from each other by any given number of binary units d. The method consists of numbering the combinations and sequential elimination of combinations that do not satisfy the specified difference in the combinations. It is shown that the number of combinations in such a method depends on the choice of the first combinations. For a great number of binary units in the code, the upper limit of the number of code combinations differing by d units is determined to be, on the basis of the Shannon limit theory, $x_n(n, d) \leq 2^{zn}$ where $z \leq \varphi(\alpha)\, n$, $\varphi(\alpha) = 1/2\,[\alpha \log_2 \alpha + (2-\alpha) \cdot \log_2 (2-\alpha)]$, and $\alpha = d/n$. A graph of the function $\varphi(\alpha)$ is given. It is shown that as n approaches infinity, z approaches n for any constant d. If the distance d increases in proportion with n as n approaches infinity, then

Card : 1/2

SIFOROV, V. I.

Category : USSR/Radiophysics - Statistical Phenomena in Radiophysics I-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4442

Author : Siforov, V.I.
Title : Concerning the Theory of Ideal Coding of a Binary Transmission

Orig Pub : Radiotekhn. i elektronika, 1956, 1, No 4, 407-417

Abstract : Qualitative relationships are obtained between the noise rejection, bandwidth, and parameters of a code as applied to binary transmission for an ideal code in the sense of Shannon. Based on the general relationships for the decoding error probability in the case of binary transmission, as established by Bernard, asymptotic expressions are obtained for this probability. An approximate expression is obtained for the decoding error probability as a function of the probability of an error in the elementary transmission, of the number of transmissions in the code combination, and of the bandwidth of the system. The law of distribution of the decoding error probability is determined. It is proved that this law is approximately normal in the case of a large number of transmissions in the code group. Based on the relationships established,

Card : 1/2

SIFOROV, V.I.

Main problems of multichannel radio relay communication lines.
Vest.AN SSSR 26 no.4:14-18 Ap '56. (MLRA 9:7)

1.Chlen-korrespondent Akademii nauk SSSR.
(Radio relay systems)

SIFOROV, V.I.

Third international congress on atomic energy, radioelectronics, and motion picture engineering. Vest. AN SSSR 26 no.10:77-78 O '56. (MLRA 9:11)

1. Chlen-korrespondent Akademii nauk SSSR.
(Rome--Electronics--Congresses)

SIFOROV, V. I.-PROF.

"Accumulazioni di rumori ed evanescenza nei ponti radio e microonde" and "Codificazione Binaria" - papers submitted at the Third International Congress and Exhibition of Electronics and Nuclear Energy, Rome, Italy, 22 Jun-7 Jul 57.

BORODICH, S.V.; KALASHNIKOV, N.I.; MODEL', A.M.; MANAYENKOV, S.D.; PETROV, V.V.; SIFOROV, V.I., red.

[Radio relay networks] Radiorelelnye linii sviazi. Pod red. V.I.Siforova. Moskva, Vses. in-t nauch. i tekhn. informatsii, 1957. 36 p. (MIRA 12:4)

1. Chlen-korrespondent AN SSSR (for Siforov).
(Radio relay systems)

PLONSKIY, Aleksandr Filippovich; SIFOROV, V.I., redaktor; PETROVA, S., redaktor; MUKHIN, Yu. tekhnicheskiy redaktor.

[Let us take a look into the future; present and future radioelectronics] Zaglianem v budushchee; radioelektronika segodnia i zavtra. Pod obshchei red. V.I. Siferova. Moskva, Gos. izd-vo polit. lit-ry, 1957 69 p. (MLRA 10:5)

1. Chlen-korrespondent Akademii nauk SSSR (for Siferov)
(Electronics)

PROSIN, A.V. [translator]; CHASTUKHINA, Yu.Ye. [translator]; SIFOROV, V.I., redaktor; DIKAREVA, A.I., redaktor; KORUZEV, N.N., tekhnicheskiy redaktor

[Problems of telecommunication by ultrashort waves. Translated from the English] Voprosy dal'nei sviazi na ul'trakorotkikh volnakh; sbornik statei. Perevod s angliiskogo A.V.Prosina. IU.E. Chastukhina. Pod red. V.I.Siforova. Moskva, Izd-vo "Sovetskoe radio," 1957. 369 p. (MLRA 10:9)
(Radio, Shortwave) (Ionospheric radio wave propagation)

Siforov, Vladimir Ivanovich

PHASE I BOOK EXPLOITATION 50

Siforov, Vladimir Ivanovich

Radiopriyemniki sverkhvysokikh chastot (Microwave Receivers) 2nd ed., enl. Moscow, Voyen. izd-vo Min-va obor. SSSR, 1957. 634 p. No. of copies printed not given.

Ed.: Vrublevskiy, A.V., Engineer--Lt. Col.; Tech. Ed.: Solomonik, R.L.

PURPOSE: The monograph is addressed to students at military academies and higher military colleges, as well as to the engineering and technical personnel staffing the radio engineering services of the various branches of the armed forces and industry.

COVERAGE: The monograph is concerned with microwave receivers and, in particular, with radar, pulsed signal and television receivers. [The general term "microwave" is used here to translate the Russian sverkhvysokaya chastota (superhigh frequency) which is used to denote all frequencies above 30 megacycles.] The physical phenomena taking place in microwave radio receivers and their elements are

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described. Circuit characteristics are given, and the theory and method of designing such receivers is explained. In the preparation of the monograph, the suggestions and experience of professors from the various technical schools and of other specialists in the field were taken into consideration. Actively cooperating were: Sivers, A.P., Docent, who wrote chapters XIV, XV, XVI, XIX and XX, and Volgov, V.A., senior instructor, who wrote chapter IV, section 2 of chapter XVII, the Table of basic specifications of receiver-amplifier tubes and the Bibliography on microwave radio reception. There is an extensive bibliography at the end of the book. The individual bibliographic entries are classified as to subject matter and grouped under the respective chapter. In all, there are 522 such references, 467 of which are Soviet (all in Russian), 46 translations of sources in English, 2 in English, 1 translation from the French, 1 in French, 3 translations from the German, 1 translation from Hungarian, and 2 translations from other foreign languages (langugage of original not indicated).

TABLE OF CONTENTS:

BERG, A.I., akademik; VVEDENSKIY, B.A., akademik; VEKSHINSKIY, S.A., akademik; KOTEL'NIKOV, V.A., akademik; MINTS, A.L.; PISTOL'KORS, A.A.; SIFOROV, V.I.

Search, be daring, invent! Radio no.1:1 Ja '57. (MLRA 10:2)

1. Chlen-korrespondent AN SSSR (for Mints, Pistol'kors, Siforov).
(Amateur radio stations)

SIFOROV, V. I.

"Parameters of Binary-Coded System," by V. I. Siforov, Elektrosvyaz', No 1, Jan 57, pp 3-10

VII,

The author introduces the concept of mean-error probability and an optimal mean-error probability in the decoding of binary system information, and proves that the mean-error probability in decoding increases almost in direct proportion with the duration of the transmission. The author discusses the relative error probability in decoding, the quality factor of the coding system, and the coefficient of utilization of the channel.

The physical significance of the mentioned parameters are shown in their application to the binary-coded system. A formula was derived for the determination of the largest permissible quantity of information in a message compatible with the optimal error probability.

Sum 1274

PA - 2582

AUTHOR SIFOROV, V.I.

TITLE About second symposium on theory of information in U.S.A.
(O vtorom simposiume po teorii informatsii v SShA.Russian)

PERIODICAL Radiotekhnika i Elektronika, 1957, Vol 2, Nr 2, pp 252-253
U.S.S.R.
Received 4/1957 Reviewed 6/1957

ABSTRACT From September 10th to September 13th 1956 the second congress on the information theory took place at the Technological Institute of Massachusetts (USA). 300 scientists from USA, USSR, France and other countries attendet this session and 30 lectures were delivered dealing with the following subjects:
On the theory of coding, on the theory of logical machines, on the sources and users of the information, the structure of the language, the theory of the reproduction of information by continous signals, etc. Lectures were delivered by the American scientists: Shennon, Khuffman, Chang, Kremer and Mateus, by the Soviet scientists: A.N. Kolmogorov, V.I.Siforov, and by the French scientists: Shutsenberger. The lecture delivered by Kolmogorov was read by B.V.Gnedenko. He dealt with the theory of reproduction by means of continuous signals. Siforov spoke about the theory of binary coding and gave the results of the investigations carried out at the Institute for Radiotechnics and Electronics of the Academy and in the Ministry for Postal Affairs and Telecommunication of the USSR.

Card 1/2

SIFOROV, V. I.

109-11-6/8

AUTHOR: Siforov, V.I.

TITLE: Development of the **Noiseproof Feature Theory** in the USSR (Razvitiye teorii pomekhoustoychivosti v SSSR)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol. II, No.11, pr. 1413 - 1434 (USSR)

ABSTRACT: The term **noiseproof feature** (in Russian - "pomekhoustoychivost') appears to have no exact equivalent in Anglo-American literature and it is therefore advisable to define it. The author defines it as the capability of a system to combat the harmful effects of interference; in particular, the noise suppressibility of a radio receiver can be said to be its capability to secure a satisfactory reception of the desired signals in the presence of interference at its input. The theory of noise suppressibility is thus principally concerned with combatting interference and its development in the Soviet Union has proceeded along the following lines: 1) investigation of the nature and statistical structure of radio interference; 2) study of the influence of interference on radio receiving devices; 3) search for the methods of combating the interference in radio receivers and the methods

Card1/4

Development of the Noiseproof Feature Theory in the USSR.

of reducing their internal noise; 4) improvement of the transmission and reception methods by employing such techniques as frequency modulation, single side-band transmission, pulse modulation, code modulation, phase selection, synchronous methods of reception, etc; 5) development of the theory of potential interference suppressibility, i.e. the maximum possible noise suppressibility which can be achieved by employing an ideal receiver; 6) development of the information theory which can be regarded as a new branch of the probability theory and which investigates the general laws relating to the transmitted and received signals, and 7) search for the new methods of transmission and reception of signals which would be based on the information theory, in particular, the search for the methods of transmission of speech, facsimile and television employing reduced bandwidths. Soviet scientists have been highly successful in all the above mentioned fields. In 1953, V.A. Kotel'nikov published a work entitled "On the Channel Capacity of Ether and Conductor in Electrical Communications" which was one of the first works dealing with the general theory of communications. In 1935, D.V. Ageyev indicated the possibility of increasing the number of transmission channels

Development of the Noiseproof Feature Theory in the USSR.

in a given frequency band while, in 1947, Kotel'nikov published a new work which first introduced the concept of potential noise suppressibility. Kotel'nikov defined the potential suppressibility as the maximum suppressibility which can be achieved by employing an ideal receiver such as to secure an optimum correspondence between distorted and undistorted signals for a given method of transmission and a given type of interference; he also considered the methods of improving the signal-to-noise ratios of communication systems. The information theory, which was originated by C. Shannon, has been studied intensively in the Soviet Union, where the mathematical foundations for this work were laid down by an outstanding Soviet scientist, A.N. Kolmogorov. Theoretical investigation of the influence of noise on the transmission systems employing various types of modulation has been studied by a number of Soviet scientists; A.N. Shchukin gave an analysis of pulse-type interference in radio-telegraph and radio-telephone signals, while V.I. Siforov investigated the effect of noise on the reception of frequency-modulated and phase-modulated telephone and telegraph signals and on radar pulse signals. V.I. Siforov and A.A. Kharkevich have published a number of works dealing with

Siforov V. I.

INFORMATION THEORY

"On the Most Expedient Utilization of Coding Systems" by V.I. Siforov, Elektrosvyaz', No 5, May 1957, pp 7-14.

Examination of the properties of coding systems, operating under noise conditions for various statistics of transmitted symbols. A general expression is derived for the probability of the error of a transmitted telegram by one letter.

Card 1/1

SIFOROV, V. I.

AUTHORS: Siforov, V. I., Corresponding Member AN USSR, 20-6-17/42
Sindler, Yu. I.,

TITLE: Conditions of Equivalence of the Statistic Properties of Radioengineering Systems With a Great Number of Random Parameters (Ob usloviyakh ekvivalentnosti statisticheskikh svoystv radiotekhnicheskikh sistem s bol'shim chislom sluchaynykh parametrov)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 6, pp. 956-958 (USSR)

ABSTRACT: From the analysis of the mode of operation of some radioengineering systems (reference 1, 2, 3) results the problem of comparison of the distribution law of probabilities of the sum of the accidentally indipendent values $x_1, x_2, \ldots, x_n$ with the distribution law of the maximum (in the sense of a random realization) value. Such a problem arises e. g. with the radiorelay-lines with the analysis of the influence of limiters on the law of distribution of the noisepower in the telephone canal. Also with the radiolocation such a problem arises (reference 3). The solution of such problems facilitates the correct construction of radioengineering systems. If the distribution laws of the values $x_1, x_2, \ldots, x_n$ are similar to each other, then the distribution law of the sum of the random sizes in the range of their greatest values at the satisfaction of some additional conditions is practically equal to the

Card 1/2

Conditions of Equivalence of the Statistic Properties of Radioengineering Systems With a Great Number of Random Parameters.

distribution law of the greatest of these values. Radioengineering systems the main indices of which are determined by the maximum value and their sum, are equivalent. Moreover, the similarity of these distribution laws can be applied for practical evaluations of the distribution law of the sum, because the distribution law of the maximum value can be determined elementarily. A corresponding theorem is given and proved. There are 4 references, 3 of which are Slavic.

ASSOCIATION: Institute of Radioengineering and Electronics AN USSR (Institut radiotekhniki i elektroniki Akademii nauk SSSR)

SUBMITTED: June 21, 1957

AVAILABLE: Library of Congress

Card 2/2

PROSIN, Aleksandr Vasil'yevich; TSVETKOV, Aleksey Nikolayevich; SIFOROV, V.I., otv.red.; VOLKOVA, E.M., red.izd-va; GUSEVA, I.N., tekhn.red.

[Radio relay lines] Radiorelelnye linii sviazi. Moskva, Izd-vo Akad.nauk SSSR, 1958. 106 p. (MIRA 12:3)

1. Chlen-korrespondent AN SSSR (for Siforov).
(Radio relay systems)

PLONSKIY, Aleksandr Filippovich; SIFOROV, V.I., nauchnyy red.; BERENSON, Yu.E., red.; YUSFINA, N.L., tekhn.red.

[Radio electronics, or the story of wonderful inventions: how man tamed the waves; the new Aladdin and his lamp; how they listened in on the conversation of the stars; hundreds of professions for the "thinking" machine; and many other subjects] Radioelektronika ili rasskaz ob udivitel'nykh otkrytiiakh: o tom, kak chelovek priruchil volnu, o novom Aladine i ego lampe, o tom, kak podslushali razgovor zvezd, o sta professiiakh "myshliashchei" mashiny i o mnogom drugom. Moskva, Sovetskaia Rossiia, 1958. 222 p. (MIRA 12:4)

1. Chlen-korrespondent Akademii nauk SSSR (for Siforov).
(Electronics)

Siforov, V. I.

MESYATSEV, Pavel Pavlovich; YEVTEYEV, F.Ye., kand.tekhn.nauk, retsenzent; SIFOROV, V.I., red.; KUZNETSOVA, A.G., izdatel'skiy red.; PUKHLIKOVA, N.A., tekhn.red.

[Application of the theory of probabilities and mathematical statistics to the design and manufacture of radio apparatus] Primenenie teorii veroiatnostei i matematicheskoi statistiki pri konstruirovanii i proizvodstve radioapparatury. Pod red. V.I. Siforova. Moskva, Gos. izd-vo obor. promyshl., 1958. 261 p. (MIRA 11:7)

1. Chlen-korrespondent AN SSSR (for Siforov)
(Radio--Apparatus and supplies)
(Probabilities) (Mathematical statistics)

SIFOROV, V. I.

V. I. SIFOROV, "On the capacity of single-path and multipath communication channels." Scientific Session Devoted to "Radio Day", May, 1956, Trudrezervizdat, Moscow, 9 Sep. 56

Communication channels with random variations of the parameters are classified into channels of the first and second kind in terms of their capacity for a low additive interference level. The concepts of intrinsic and apparent capacity are introduced. It is proved that the capacity is not lowered by more than 17% when the parameters of a multipath channel perform slow random variations, no matter what the signal-to-noise ratio.

A condition is found to obtain a high capacity for a channel with multipath wave propagation for a low additive interference level. It is proved that if the common bandwidth of the frequency spectra of all the randomly varying parameters of the multipath channel is less than its frequency pass band then its capacity will increase without limit as the additive interference level is reduced without limit. This statement is valid under the assumption that the frequency spectra of all the randomly varying parameters of the channel are bounded. An unbounded reduction in the additive noise level for unbounded frequency spectra of all the randomly varying parameters of the channel are bounded. An unbounded reduction in the additive noise level for unbounded frequency spectra of the channel parameters leads to a finite capacity which is very high if the spectral density of each parameter diminishes sufficiently rapidly as the frequency increases.

A lower bound is determined for the capacity of a channel with random variations of the absorption during the simultaneous effect of additional inter-

[illegible], N.I.

INFORMATION THEORY

"Conditions for Obtaining High Carrying Capacity in Communication Channels with Random Variations of Parameters", by V.I. Siforov, Elektrosvyaz', No 1, January 1958, pp 3-8.

Communication channels with a random parameter variation are classified into two kinds, in accordance with their carrying capacity at low level of additive noise. The author introduces the concept of the intrinsic carrying capacity of channels of one of these types. It is shown that if the total bandwidth of the frequency spectra of all the random-varying parameters of a multiple channel is less than its frequency bandwidth, then its carrying capacity increases without bound as the level of additive noise is reduced without limit.
Refers to work by Shannon ("The Zero Error Capacity of a Noisy Channel" IRE Transactions, IT-2, No 3, 1956) Elias ("Predictive Coding", IRE Transactions and Information Theory IT-1, No 1, 1955) and Feinstein ("A New Basic Theorem of Information Theory" IRE Transactions, IGIT-4, 1954).

Card 1/1

S/044/60/000/012/014/014
C 111/ C 333

AUTHOR: Siforov, V.I.

TITLE: On the theory of communication channels with multiwire propagation

PERIODICAL: Referativnyy zhurnal, Matematika, no. 12, 1960, 147, abstract 14246. (Sb. tr. Nauchno-Tekhn. o-va radiotekhn. i elektrosvyazi im. A. S. Popova, 1958, vyp. 2, 56-86)

TEXT: The author investigates the carrying capacity of a certain class of physical real communication channels. The mathematical description of the considered channels is not explicitly given.

[Abstracter's note: Complete translation.]

Card 1/1

Siforov, V. I.

SOV/142-58-4-29/30

AUTHOR: Stolyarov, A.G.

TITLE: All-Union Session Marking "Radio Day" (Vsesoyuznaya nauchnaya sessiya, posvyashchennaya "Dnyu Radio")

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Radiotekhnika, 1958, Nr 4, pp 517-521 (USSR)

ABSTRACT: During the period May 12-17, 1958, an All-Union Scientific Session was held in Moscow, devoted to "Radio Day". It was organized by the Scientific Technical A.S.Popov Association for Radio-Engineering and Electro-Communications. 280 papers were read at the session, 25 in the field of information theory and more than 20 in the field of electronics, dealing with theoretical/experimental research on electronic equipment. V.I.Siforov spoke on "The Transmission Capacity of Single-Ray and Multi-Ray Communication Canals". L.I.Filippov looked at the potential interference resistance of an ideal radio receiver. D.A.Novik spoke on "The Transmission System of Electric Signals

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All-Union Session Marking "Radio Day"

by the Optimal Code of Shannon-Fano." A. Ye. Basharinov and B.S.Fleyshman discussed "The Use of the Successive Analysis Method in Equipment for Determining Weak Signals in Noise", and L.M.Fink examined "The Potential Interference Resistance in a Non-Definite Signal Phase". V.A.Kashirin and G.A.Shustova discussed "The Optimal Parameters of the Tele-measuring System with regard to Interference Resistance". B.S.Fleyshman spoke on the question of creating an optimal code - in the Shannon conception - in the case of a binary symmetrical canal. L.F.Borodin discussed "The Method of Creating Several Codes with a Simple Base". In the field of electronics, P.A.Tarasov spoke on "Broad Band Electron Ray Tubes for Observation and Recording of Electric Impulses and Ultra-High Frequencies" and V.P.Radchenko examined the question of the practical utilization of tubes with a cathode net. G.P.Semenov, V.P.Sazonov, M.M.Sbitneva and A.S.Bondarev examined: "Use of the Radiosonde with a High-Ohm Feed for Examining Electromagnetic fields in resonators and wave guides". V.V.Bakakina spoke on

the use of the diffusion method for resonance discharge. M.I.Kuznetsov, V.A.Berbasov and L.P.Bobrova looked at the fluctuation process in an indivisible magnetron, and Yu. Katsman spoke on "The Selection of Oscillatory Energy of an Electronic Current, Modulated According to Density". M.B.Golant discussed a negative clystron with a wide range of electron adjustment. S.I.Bychkov explained the phenomenon of electron displacement and gave an approximate description of the frequency characteristics of the magnetron under conditions of high amplitude oscillations. A.I.Tereshchenko spoke on "The Influence of Various Factors on a Critical Magnetic Magnetron Field with a Grid", and A.S.Tager and V.A.Solntsev discussed the question of diffusing a small high frequency signal in electron currents with a periodically variable electron velocity. V.V. Slutskaya spoke on the results of research into spiral thin film absorbers for LBV. Approximately 20 papers were read in the field of transmitting equipment. These included: Z.I.Model' and N.S.Fuzik who discussed

an approximately equivalent lay-out for a tube generator. A.I.Lebedev-Karmanov spoke on "Modern Television Stations" and V.M.Katushkina and Z.I.Model' discussed "Bridge Methods of Combining the Outputs of Several Generators". S.G.Afanasov and P.M.Bubnov examined the design of triode generators for the decimeter range. V.P.Demeshin spoke on the control of an RC generator with the help of an element, possessing a linear, broken characteristic, and K.N.Burmistrov's paper dealt with questions of temporary instability of quartz resonators. M.N.Merzlyakova, Z.M.Alekseyeva, I.N. Vazhenin and V.N.Detinko examined the question of causes for frequency and amplitude fading in autogenerators with semi-conductor triodes. A.S.Maydanovskiy investigated the work of a semi-conductor triode with a grounded base and influenced by an extra-harmonious force. More than 25 papers were read in the field of radio-engineering, including E.V.Zelyakh on the theoretical basis of the autonomous four poles. S.I.Tetel'-

 baum spoke on compensation for distortions and pre-

All-Union Session Marking "Radio Day"

distortions. G.Sh.Kevanishvili spoke on "The Theory of Non-Linear Oscillations in Radio Engineering". I.G.Akopyan gave the results of research into processes in an autogenerator, influenced by fluctuation interference and synchronized by a small sinusoidal force with a frequency close to the proper frequency of the autogenerator. More than 20 papers were delivered in the field of semi-conductor equipment. These included: A.V.Krasilov, Ye.S.Saltykov and A.B.Polyakov on semi-conductor triodes produced in the USSR and abroad. E.I.Adirovich and A.Yu.Gordonov discussed the calculations for frequency and transition characteristics of an amplifier cascade with semi-conductor triodes according to a lay-out with a common base. B.N.Kononov spoke on change-over processes with symmetrical triggers and with semi-conductor surface triodes. Yu.M.Azyan and Ye.Ya.Senatorov examined the question of the influence of the change-over characteristics on the work of transistor lay-outs. Papers read in the field of antenna equipment included: A.A.Pistol'kors and M.L.

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All-Union Session Marking "Radio Day"

Marshak on reflection and refraction of electro-magnetic waves on the air-ferrite boundary and in a right-angled wave guide, and V.A.Khromov and G.L.Suchkin spoke on "The Electro-Magnetic Radiation in Systems not Conditioned by the Theory of Reciprocity in the Ultra-High Frequency Range". V.A.Kaplun, L.V.Knyazeva and A.A. Pistol'kors examined - helped by the Kirchhoff Method - diffraction in a dielectric or semi-conductor plate. In the field of radio wave propagation, around 15 papers were read. These included: G.V.Bukin on an apparatus for probing the ionosphere; G.Ye.Levitskiy on questions of the ultra-short wave propagation theory over the non-homogenous earth's surface; F.I.Peregudov and B.S.Dudnik both spoke about radiolocation observations of meteors in Tomsk. K.M.Kosikov and V.I.Trunov gave an experimentally tested formula for computing the coefficient of a cross-over modulation, depending on the parameters of the transmitters and on their territorial dispersion. G.M.Bartenev evaluated the mutual dependence between the 11 year cycle of solar activity and the degree of

107-58-5-10/32

AUTHOR: Siforov, V., Member-Correspondent of the USSR Academy of Sciences

TITLE: Theory of Information (Teoriya informatsii)

PERIODICAL: Radio, 1958, Nr 5, pp 15-16 (USSR)

ABSTRACT: The history and some principles of the theory of information are discussed. The Soviet scientists V.A. Kotel'nikov and D.V. Ageyev, who worked in this field, are mentioned, as are the American scientist Shannon (Shennon), and conferences held in London in 1955, in Cambridge (Mass) in 1956 and in Boulder in 1957. The application of the theory of information to the obtaining of data from earth satellites, for multi-channel telephone communication, etc., is explained briefly.
There are two diagrams.

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Siforov, V. I., Member of the Society 103-13-5-2/11

TITLE: On the Carrying Capacity of Communication Channels With Arbitrary Changes of the Absorption (O propusknoy sposobnosti kanalov svyazi so sluchaynymi izmeneniyami pogloshcheniya)

PERIODICAL: Radiotekhnika, 1958, Vol 13, Nr 5, pp 7-8 (USSR)

ABSTRACT: The lower limit of the carrying capacity of a single-beam communication channel is determined, i.e. in such a one where the wave absorption is an arbitrary time constant in case of simultaneous action of additive fluctuation perturbations. The investigation of the lower limit of the carrying capacity is based on a method suggested by V. A. Kotel'nikov for compensating for arbitrary changes of absorption. This method bases upon taking out a part of the channel spectrum for the measurement of the absorption parameters and using these parameters to compensate for the parasitic amplitude modulation which forms in the channel.

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On the Carrying Capacity of Communication Channels With Arbitrary Changes of the Absorption

Because of the investigation the following basic properties of a singlebeam channel with arbitrary change of the absorption can be given: 1) They have a very high auto-transmissivity. The lower limit of this carrying capacity (formula (15)), is raised proportionately as the spectral density of random changes in absorption decreases more rapidly with increases in frequency. An increase in the rate of absorption fluctuation changes leads to a reduction in the lower limit of the carrying capacity of the channel. 2) In case of simultaneous action of the additive perturbations and of the absorption fluctuations, generally the lower limit of the carrying capacity is determined by the joint action of these perturbations [formulae (21) to (24)]. In case of satisfaction of the inequality (26), it is determined by the additive perturbations; and in case of satisfaction of the conditions (28), by the absorption fluctuations. 3) As partial compensation for the detrimental influence of the absorption fluctuations the taking out of a spectrum part for the measurement of the arbitrary absorption parameters

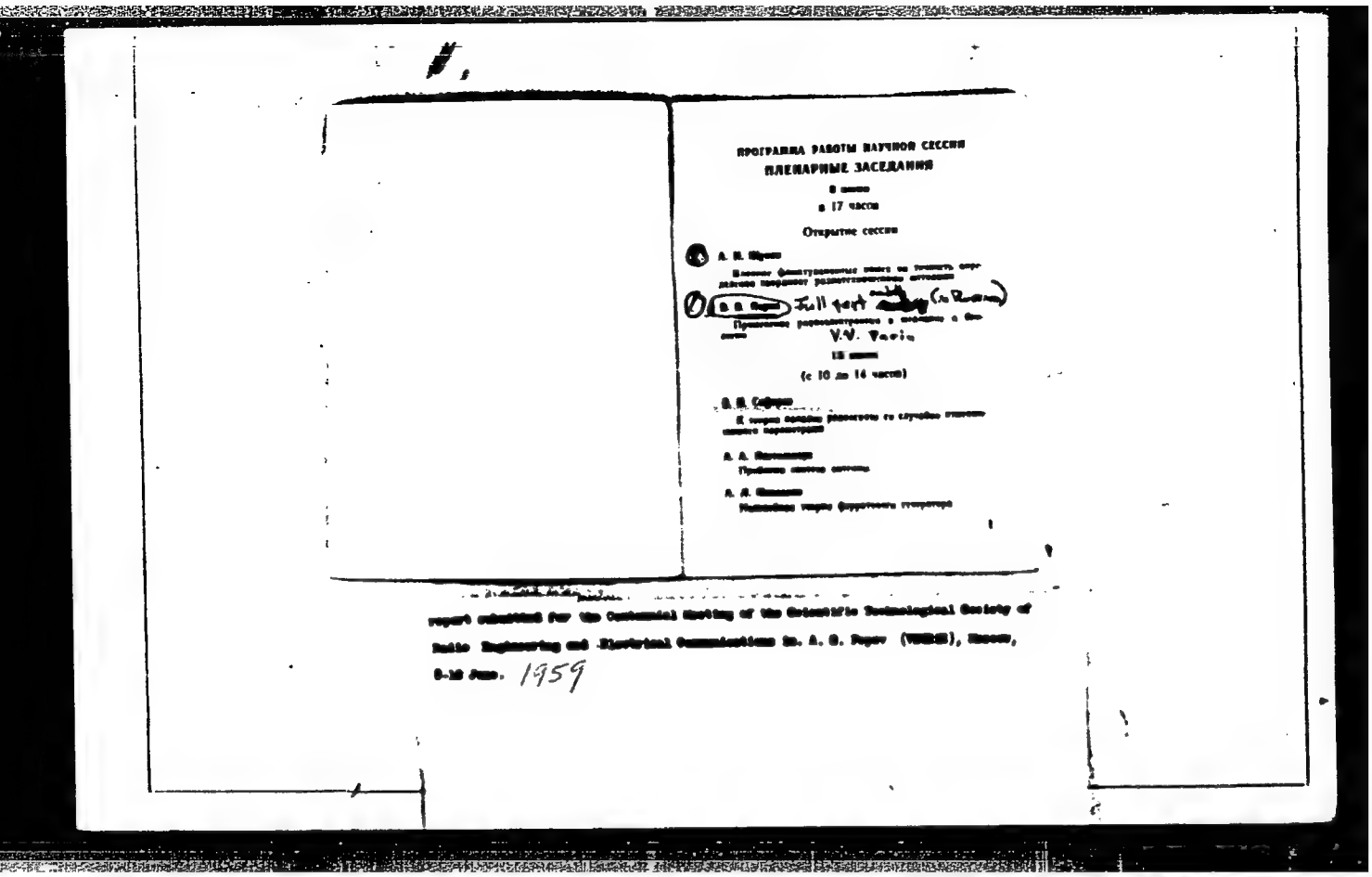
On the Carrying Capacity of Communication Channels With Arbitrary Changes of the Absorption

can be used. The lower the level of the additive perturbations, the wider the measuring-channel band must be chosen to reach the top velocity in information transmission. In case of widening of the width of the measuring-channel frequency band it is necessary to increase the rate of the control and information signal output [formulae (16) and (23)]. 4) With proper selection of the protection bands which separate the measuring part of the channel from its information part, the lower limit of the carrying capacity essentially is determined by effects of the action of additive perturbations in the measuring and information part of the channel as well as by omission of the side frequencies which form because of the parasitic amplitude modulation of the measuring channel and lie outside the measuring-part band of the channel.
All other effects may be neglected. There are 3 figures, and 3 references, all of which are Soviet.

SUBMITTED: February 4, 1958

AVAILABLE: Library of Congress

Card 3/3 1. Communication systems 2. Waves--Absorption 3. Waves--Absorption



ПРОГРАММА РАБОТЫ НАУЧНОЙ СЕССИИ

ПЛЕНАРНЫЕ ЗАСЕДАНИЯ

в 17 часов

Открытие сессии

(с 10 до 14 часов)

Full text

V.V. Vecia

1959

13 июня

в 17 часов

В. С. [illegible] (США)

Стереофоническое [illegible] с [illegible] частотной модуляции

Э. И. [illegible]

[illegible] процессы в [illegible] свойства [illegible] транзисторов

Л. И. [illegible]

Электрическое моделирование [illegible] радиоэлектроники

Работа секций

1. СЕКЦИЯ ТЕОРИИ ИНФОРМАЦИИ

Руководитель В. И. Сифоров

9 июня

(с 10 до 18 часов)

В. И. Сифоров,
Л. Ф. [illegible]

О [illegible]

Г. Г. [illegible],
В. И. [illegible],
Р. Г. [illegible],
Р. И. [illegible],
Б. И. [illegible]

О [illegible] эффективности [illegible] автоматического [illegible] сообщений

А. И. [illegible]

Исследование некоторых схем [illegible] речевых сигналов

В. Е. [illegible]

Испытание, демонстрация [illegible] речи

9 июня

(с 18 до 22 часов)

Л. И. [illegible]

Пропускная способность [illegible] частот

Л. Ф. [illegible]

О скорости передачи сообщений по [illegible] каналам

Report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORiE), Moscow, 8-12 June. 1959

KAZNACHEYEV, Yuriy Ivanovich; SIFOROV, V.I., otv.red.; TSVETKOV, A.N., red.izd-va; GUS'KOVA, O.M., tekhn.red.

[Broadband long-distance communication with waveguides] Shirokopolosnaia dal'niaia sviaz' po volnovodam. Moskva, Izd-vo Akad.nauk SSSR, 1959. 83 p. (MIRA 12:6)
(Wave guides) (Telecommunication)

SIFOROV, V.I.

Invention of radio and the development of radio electronics. Nauch.dokl.vys.shkoly; radiotekh.i elektron. no.1:3-10 '59. (MIRA 12:10)

1. Institut radiotekhniki i elektrotekhniki AN SSSR.
(Radio)

SIFOROV, V.; STOLYAROV, [illegible], inzh.

From the invention of radio to modern electronics. NTO no.2: 52-54 F '59. (MIRA 12:2)

1. Chlen-korrespondent AN SSSR.
(Popov, Aleksandr Stepanovich, 1859-1906) (Electronics)

9(0) SOV/29-59-3-2/23

AUTHOR: Siforov, V. I., Corresponding Member, AS USSR, President of the Scientific-Technical Association for Radio Technology and Electric Communication imeni A. S. Popov

TITLE: The Great Heritage of Aleksandr Popov (Velikoye naslediye Aleksandra Popova)

PERIODICAL: Tekhnika molodezhi, 1959, Nr 3, pp 2-4 (USSR)

ABSTRACT: This popular-scientific article was published on the occasion of the 100th anniversary of the birthday of the great Russian scientist Aleksandr Stepanovich Popov (March 16, 1859 - 1906), the inventor of radio. On May 7, 1895 Popov demonstrated a thunderstorm recorder - the first radio receiver in the world. A radio telegram sent on February 9, 1900 allowed the ice-breaker "Yermak" to save a group of fishermen. In 1905, A. S. Popov, Director of the Institute of Electric Engineering, protested against the prosecution of revolutionary students. In this article the author tries to give a description of the further development of radioelectronics. In his opinion radioelectronics will be widely used in the near future in the automatization of production, in medicine and will be the determining direction in

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the development of science. Continuously higher frequencies and continuously shorter radiowaves will be applied which undoubtedly will open new prospects of applying radio in many scientific and technical fields as well as in every-day life. By the application of waves in the millimeter and submillimeter range it will be possible to realize "radiovision", that means, distinct objects will be observed without optical sight. A large number of phone calls and television broadcasts will be cast over large distances by means of millimeter waves. Also the reception of colored stereoscopic television broadcasts on a large screen will thus be possible. From among many much promising directions the so-called quantum radiotechnique is of special interest. It was discovered by the Soviet scientists N. G. Basov and A. M. Prokhorov of the Fizicheskiy institut Akademii nauk SSSR (Physics Institute of the Academy of Sciences, USSR) and somewhat later by the American scientists of Columbia University. Considerable progress has already been made in this field. The so-called molecular generators of electric oscillations were built which supply a high stability of frequencies. They permit time measurement with an accuracy of 10^{-11} sec. Another field of

quantum radiotechnique covers the quantum-mechanical amplifiers. The sound levels which presently limit the range of radio broadcasts, will be reduced by the manifold by means of these amplifiers, which will be particularly important to an accurate reproduction of communications received from spaceships. Further, they will be given new properties and a wider range of application by the construction of ever more complicated machines on the basis of electronics and kibernetics. It may be assumed that the investigation of cerebral functions, the nervous system and physiological processes by means of these machines will receive experimental support in the form of new radioelectronic means. Also in scientific research work these machines will be very helpful. Due to a continuous increase in publications, the whole material cannot be mastered by one man only. In order to make use of this experience in the solution of respective problems, future electronic computers will make a corresponding selection and put it immediately at the disposal of the scientist. It may be assumed that the data required for a certain field will be evaluated by new means. All computations will be made by machines. In the development of radioelectronics semiconductors play a special part. In principle, their application opens

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S/044/61/000/010/035/051
C111/C222

16.1 6,7000

AUTHORS: Siforov, V.I., Fleyshman, B.S., and Linkovskiy, G.B.

TITLE: The optimal reception of a parameter which is transferred through a channel with noises containing multiplicative, additive and time components

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1961, 29, abstract 10 V 176. ("Sb. tr. Nauchno tekhn. o-vo radiotekhn. i elektrosvyazi im. A.S. Popova", 1959, vyp. 3, 3-17)

TEXT: The authors consider the transfer of the signal $f_\lambda(t)$ ($f_\lambda(t)$ is a not random known function of the time depending on the parameter λ) through a multiray channel at the outlet of which the signal

$$y(t) = \sum_{i=1}^{k} \alpha_i(t) \cdot f_\lambda\left[t - \tau_i(t)\right] + \nu(t)$$

is obtained, where $\nu(t)$, $\alpha_i(t)$, $\tau_i(t)$ are independent random processes which are called the additive, multiplicative and time compo-

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nents of the noise. It is assumed that the processes $\alpha_i(t)$ and $\tau_i(t)$ for different indices i are equally distributed and that $k \gg 1$. It is demanded that the parameter λ can be estimated in virtue of the realization y(t) on a certain time interval. From y(t) the authors go over to values taken in discrete lattice points $t_1 \ldots t_n$ and they assume that the values of each of the considered processes are independent in the points t_i and t_j $(i \neq j)$. The for the estimation it is proposed to use the method of the maximal credibility and the momentum method. The equation for the maximal credibility is written, where the conditions under which it is deduced are formulated very unexact so that the limits of applicability of the obtained results remain unclear. Beside of general remarks on the known properties of the estimations of maximal credibility the authors give concrete examples in which further properties of these estimations are discussed.

Reviewer's remark : The authors assume that the independence of the values

Card 2/3

6(0), 9(0) SOV/105-59-3-1/27

AUTHOR: Siforov, V. I., Corresponding Member of the Academy of Sciences, USSR

TITLE: Aleksandr Stepanovich Popov and the Development of Radio Electronics (Aleksandr Stepanovich Popov i razvitiye radioelektroniki)

PERIODICAL: Elektrichestvo, 1959, Nr 3, pp 1-4 (USSR)

ABSTRACT: At first there is given a short curriculum vitae of A. S. Popov (29.3.1859 - 13.1.1906), the inventor of the radio, thus commemorating his 100th birthday. A survey on the development of radio engineering and electronics is presented next. This development proceeded in three stages: the first ending 1918, the second lasting from 1918 to 1940, and the last from 1940 up to date. The third section is characterized by ultra-high frequency transmission, television, electronic automation and electronic computers. Great success was made in the following fields: transmission of electromagnetic energy in the ultra-high frequency range, the utilization of ferrites in that range, the development of vacuum tubes and of semiconductor devices, the lifetime of which reaches 70,000 hours and more. Laboratory samples of amplifying and generating semiconductor devices are as yet available which operate up to frequencies of 10,000 Mc. The development of radioastronomical methods lead to

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Aleksandr Stepanovich Popov and the Development of Radio Electronics

the detection of the following phenomena: the collision of two galaxies, the existence of interstellar hydrogen (emitting 21 cm radio waves), radio emission of the moon with a wavelength of 12 mm, of Mars with a wavelength of 30 mm, and of Jupiter with a wavelength of 15 m. Radiosextants have been constructed which permit a determination of the position of ships or aircraft according to the radio emission of the sun and the moon. The stages, along which the development proceeded in the USSR from 1917 are described in brief. - 1958 a number of 34,900,000 radio receivers were in operation in the USSR. The radio stations of the USSR broadcast programs in 89 languages. From 1948 to 1957 the production of industry was raised by the fourfold, the production of radioelectron equipment alone by the 18-fold. At the end of 1957 more than 4 million radio receivers and television sets were produced. At the end of 1958 more than 50 television centers existed in the USSR. In 1954 the Soviet scientists N.G. Basov and A.M. Prokhorov at the Fizicheskiy institut imeni P.N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P.N. Lebedev of the Academy of Sciences, USSR) and the American scientists Gordon, Zeiger(?) and Townes from Columbia University independently of each other have developed new

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methods of generating and amplifying electromagnetic waves. Their investigations provided a basis for a new field of radioelectronics, of quantum radio engineering. The Academician A. L. Mints supervised the construction of the radioelectronic part of the proton synchrotron for 10 billion ev. The most recent achievements in the USSR are enumerated: the development of ballistic long-distance rockets, the launching of artificial earth satellites, the development of high-quality electronic computers, and of the first cosmic rocket, which became a planet. Automatic radioelectronic systems served in the determination of the trajectory of the cosmic rocket, its further motion was predicted with high accuracy and the transmission and reception of scientific information was realized. In January 1959 the Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi imeni A. S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A. S. Popov) in collaboration with the Akademiya meditsinskikh nauk SSSR (Academy of Medical Sciences USSR) and the Gosudarstvennyy komitet po radioelektronike pri Sovete Ministrov SSSR (State Committee of Radioelectronics at the Council of Ministers of the USSR) held a conference on the applications of radioelectronics in medicine and in biology.

Card 3/4 L. K. Laletin, turner in the Kirovskiy zavod (Kirov Works), Member

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of the Nauchno-tekhnicheskoye obshchestvo mashinostroiteley (Scientific and Technical Society of Machine Builders) developed an electronic micrometer with a measuring accuracy of 0.02 mm, which permits to make measurements without being forced to stop the machine, and introduced this apparatus into practical work.

9 (0) SOV/107-59-3-17/52

AUTHOR: Siforov, V.I., Corresponding Member of the USSR Academy of Sciences

TITLE: The Society Imeni A.S. Popov (Obshchestvo imeni A.S. Popova)

PERIODICAL: Radio, 1959, Nr 3, p 19 - 20 (USSR)

ABSTRACT: The Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi imeni A.S. Popova (All-Union Scientific-Technical Society for Radio Engineering and Electrical Communication imeni A.S. Popov) was created in May 1945. In May 1950, at the first congress of this Society, it numbered more than 2000 members. About 70 branch organizations were created during 1947 to 1949, which began to work on the further development of radio and electrical communication. Presently, the Society has 18,000 members of whom 15 are academicians or associates of the USSR Academy of Sciences, more than 380 are doctors

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The Society Imeni A.S. Popov

and candidates of sciences and more than 17,000 are engineers and technicians. The Presidium of the Society is composed of well-known scientists: Academicians A.I. Berg, B.A. Vvedenskiy, B.A. Kotel'nikov, A.L. Mints; Corresponding Member of the USSR Academy of Sciences A.A. Pistol'kors; leading personalities from ministries and departments including Z.V. Topuria, and G.D. Burdun. The society has 30 local organizations, nine of them on a republic level and 21 on oblast' and kray levels. In addition, there are 350 primary organizations. Branch offices were established in Moscow, Leningrad, Tallin, Tbilisi, Yerevan, Gor'kiy, Krasnodar, Kiyev, Riga, Minsk, Novosibirsk, Khabarovsk and in a number of other Soviet cities. During the first six months of 1958, 656 conferences, and 245 seminaries, and courses were conducted; also more than 1600 lectures and reports were given comprising the entire range of modern radio

The Society Imeni A.S. Popov

electronics. At the Central Administration of the Society, there are various sections such as: semiconductors and miniature parts (headed by Professor G.S. Tsykin); transmitters (Professor M.S. Neyman); receivers (Professor N.I. Chistyakov); radio-metering (Professor G.D. Burdun); television (Professor S.I. Katayev); antennae (Candidate of Technical Sciences A.R. Vol'pert); wire communication (Doctor of Technical Sciences I.I. Grodnev); broadcasting, electroacoustics and sound recording (Professor I.Ye. Goron); reliability of radio electronic devices (Engineer Ya. M. Sorin); general radio engineering (Professor G.A. Levin); electronic miscroscopy (Academician A. A. Lebedev); medical application of electronics (Academician V.V. Parin); electronic computer engineering (Professor L.I. Gutenmakher); section for applying isotopes for control and automation (Professor N.N. Shumilovskiy). The Society has the task

SIFOROV, V.

Further development of Russian radio electronics. NTO no.3: 32-35 Mr '59. (MIRA 12:6)

1. Predsedatel' TSentral'nogo pravleniya nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni A.S. Popova.
(Radio research)

SOV/106-59-3-8/12

AUTHORS: Siforov, V.I. and Borodin, L.F.

TITLE: The Theory of Telegram Coding by Means of Uniform Correcting Codes (K teorii kodirovaniya telegramm ravnomernymi korrektiruyushchimi kodami)

PERIODICAL: Elektrosvyaz', 1959, Nr 3, pp 55-62 (USSR)

ABSTRACT: The work described has been carried out at the Institute of Radio Engineering and Electronics of the Academy of Sciences of the USSR. The use of code groups in telegrams is not new but the most recent contribution to the subject has been made by a group of Czech workers (Ref 1). Methods of constructing codes which reveal and correct errors have been described earlier (Ref 2, 3, 4, 5 and 6). The cost of sending a telegram which is partly encoded is given by (2), if the number of encoded telegrams is M_1 then the time to encode is t_1, given by Eq (7) and the time to decode is t_2, given by Eq (6). Making these substitutions in (2) we find that the coefficient expressing the improvement in the system is given by (11); the improvement is greatest when this number is least. It is obvious from this expression that the best conditions are those under

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which the most frequently occurring telegrams are encoded. If we suppose that the distribution of messages is normal and that 2k of them are encoded, then Fig 1 shows the improvement in transmission for various values of dispersion and message length. These curves show that the improvement factor lies between 2 and 5. When plain text is transmitted, errors may be detected and corrected by comparison with the surrounding text. With a coded message however, quite meaningless groups are employed and other means are necessary to reveal errors. We will suppose that "a" letters are used to construct the groups. Then the general expression for a five-position code in which all the combinations differ with one another by not less than two positions is given by Eq (18). Fig 2 shows how the vocabulary may be constructed for the case where a = 5. Three tables are constructed and connected together as shown and contain the symbols inserted from the formulae (21), (22) and (23). The coded group (18) consists of four information symbols and a control symbol. Suppose

the information is 0113, the combination 01 is found in the second row of Table 1, while the combination 13 is found in the fifth column of Table III. These two lines intersect in Table II giving the control symbol 0. The construction of a code in which the groups differ by not less than three positions is undertaken with Eq (24) as a general expression (Fig 3 shows the tables for finding the control symbol). In modern telegraphic equipment a seven-unit code is employed of which five units may be used to carry information. The majority of the letters in the Russian alphabet may therefore be encoded. If the code system of Eq (24) is used then it is possible to both reveal and correct single errors. Suppose for example that the group 02132 was transmitted but that due to distortion was received as 04132. Then from the tables in Fig 3, it will be seen that if the first three letters are taken as 041 then the second two cannot be 03; this proves that the receiver is incorrect. To reveal the error we work from the other end of the message. In

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Table III (Fig 3) we find the number of the row in which the combination 32 occurs; this is row 5. Along the same column in Table II (Fig 3) we find the third symbol as 1 (row 4). Further in Table I (Fig 3) the intersection of row 4 and column 5 gives 02. Since this combination (02) differs from the first two letters as received (04) in only one position, then we can conclude that the second letter as received is incorrect and that the true group should be 02132. There are 3 figures and 7 references, 5 of which are Soviet and 2 English.

SUBMITTED: 1st November 1958

SIFOROV, V.

Science without a past. Izobr. i rats. no.8:10-11 Ag '59.
(MIRA 13:1)

1.Chlen-korrespondent AN SSSR, predsedatel' TSentral'nogo pravleniya nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi im. A.S. Popova.
(Electronic control)

SIFOROV, V.

New stage in the conquest of space by man. NTO no.10:3-4 O '59.
(MIRA 13:2)

1.Predsedatel' TSentral'nogo pravleniya nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi im. A.S. Popova, Chlen-korrespondent AN SSSR.
(Lunar probes)

AUTHOR: Suchkin, G.L.

TITLE: The First All-Union Conference on Statistical Radio Physics (Pervaya Vsesoyuznaya konferentsiya po statisticheskoy radiofizike)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - radiotekhnika, 1959, Vol 2, Nr 1, pp 121-127 (USSR)

ABSTRACT: The first All-Union Conference on Statistical Radio Physics took place in Gor'kiy from 13 to 18 October 1958. The Conference was organized and conducted by the Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom gosudarstvennom universitete imeni N.I. Lobachevskogo (Scientific Research Institute of Radio Physics at the Gor'kiy State University imeni N.I. Lobachevskiy - NIRFI) by order of the USSR Ministry of Higher Eduction, AS USSR, VNTOR and E imeni A.S. Popov. A number of well-known specialists participated at the Conference, among them S.M. Rytov, M.L. Levin, I.L. Bernshteyn and others. Further, there were representatives of

the majority of leading scientific research institutes of radio physics, radio engineering organizations and of the vuzes. The work of the Conference was conducted in three sections. On 13 October 1958, the plenary session was opened by Professor S.M. Rytov (FIAN Moscow). He describes statistical radio physics as a branch of modern radio physics, dealing with the investigation of random processes (among them fluctuation processes). He outlined the importance of statistical radio physics for radio engineering. The USSR has a leading position in the field of statistical radio physics. The initial work in this field was performed by L.I. Mandel'shtam and A.A. Andronov, its development was continued by G.S. Gorelik, I.L. Bernshteyn and V.S. Troitskiy, working in Gor'kiy. Professor Rytov outlined the importance of statistical radio physics in quantum radio engineering. Statistical radio physics is also important in the investigation of noises, and here only the theory of thermal noises

AUTHOR: V.I. Siforov SOV/109-4-3-1/38

TITLE: Aleksandr Stepanovich Popov, and the Development of Radioelectronics (On the Occasion of the 100th Anniversary of his Birth) (Aleksandr Stepanovich Popov i Razvitiye radioelektroniki (K 100-letiyu so dnya rozhdeniya))

PERIODICAL: Radiotekhnika i Elektronika, Vol 4, Nr 3, 1959, pp 351-353 (USSR)

ABSTRACT: The 100th anniversary of the birth of the great Russian scientist and inventor, A.S. Popov, is on the 15th March, 1959. On the 7th May, 1895, A.S. Popov gave a public lecture entitled "On the Behaviour of Metallic Powders in Electrical Oscillations", at a session of the Russian Physical-Chemical Society. This day can be regarded as the day of the invention of radio. At the end of his lecture, A.S. Popov expressed the hope that his device could be used in the transmission of signals over considerable distances. Until the end of his life, A.S. Popov worked on the improvement and application of the radio devices produced by him. The list of his achievements is as follows: the transmission of the first radio message, the realisation of the first radio

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communicatien system between ships, the use of an open receiving antenna, the discovery of the speech transmission, the application of radio to life-saving at sea, and the discovery of the reflection of radiowaves from ships and other objects. The ground for the invention of radio by A.S. Popov was prepared by a number of his predecessors, M. Faraday, C. Maxwell, H. Hertz, E. Branly and O. Lodge. While A.S. Popov was carrying out his investigations, similar work was done in other countries; particularly successful in this field were G. Marconi, and J.C. Bose; N. Tesla was also carrying out similar investigations. A.S. Popov died on 13th January 1906, so he could not witness the rapid development of radioelectronics under the Soviet government. The first steps in the development of this science were taken by the Soviet government in July 1819 when V.I. Lenin issued a special decree. This resulted in the establishment of a radio laboratory in Nizhniy Novgorod. Between 1920 and the second World War, the Soviet radio engineering industry developed rapidly, and it was ready to play an

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important part in the defence of the country during the war. The Soviet Union produced a number of outstanding scientists who made a large contribution to the science of radioelectronics. The following names should be mentioned: L.I. Mandel'shtam, N.D. Papaleksi, M.V. Shuleykin, M.A. Bonch-Bruyevich, A.A. Andronov, V.P. Vologdin, A.I. Berg, B.A. Vvedenskiy, S.A. Vekshinskiy, V.A. Kotel'nikov, S.A. Lebedev, M.A. Leontovich, A.L. Mints, V.A. Fok and A.N. Shchukin. Since the war, the Soviet radioelectronics industry produced a synchrophasotron for 10 billion electron volts, ballistic rockets, artificial earth satellites and a cosmic rocket which became an artificial planet. The tasks for the immediate future for the Soviet radioelectronics are as follows: investigation and the application of millimetre and sub-millimetre waves, investigation and realisation of new methods of frequency generation and the amplification and reception of signals, development of master

 oscillators and amplifiers, investigation of novel communication channels, development of semiconductor

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devices, further development of the information theory, and a more extensive application of radioelectronics in various branches of the national economy, science and engineering.
There is 1 photograph

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9(3,9) SOV/26-59-3-4/47

AUTHOR: Siforov, V.I. (Moscow), Corresponding Member of the AS USSR

TITLE: Ways and Prospects for the Development of Radioelectronics. On the 100th Anniversary of A.S. Popov's Birthday.

PERIODICAL: Priroda, No 3, 1959, pp 15-20 (USSR)

ABSTRACT: On the occasion of the 100th anniversary of the Russian scientist A.S. Popov, the author outlines the importance of Popov's research work and describes the development of the science of electronics and their fields of application. M.A. Bonch-Bruyevich was one of the initiators of Soviet radio engineering which has made considerable progress during the past decade. For instance, from 1948-1957 the building of radioelectronic devices increased by almost 18 times. By the end of 1958, there were 53 television centers in the USSR and they will increase by 2 1/2 times by the end of the new 7-Year Plan. This plan envisages an extensive

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